



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/723,030

11/26/2003

Kevin John Brown

2775/105

8854

2101 7590 10/28/2010
Sunstein Kann Murphy & Timbers LLP
125 SUMMER STREET
BOSTON, MA 02110-1618

EXAMINER

CATTUNGAL, SANJAY

ART UNIT

PAPER NUMBER

3768

NOTIFICATION DATE

DELIVERY MODE

10/28/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATENTS@SUNSTEINLAW.COM

Office Action Summary	Application No. 10/723,030	Applicant(s) BROWN, KEVIN JOHN	
	Examiner SANJAY CATTUNGAL	Art Unit 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 6-12, 18, and 19, are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 6,842,502 to Jaffray et al. in view of U. S. Patent No. 7,171,255 to Holupka et al. and U. S. Publication No. 2005/0171430 to Zhang et al.**

3. Regarding **Claim 6**, Jaffray teaches a two-dimensional imager responsive to imaging radiation and generating a two-dimensional imaging output (col. 3 lines 40-45); computing means for processing the imaging output to produce tomography data (col. 23 lines 18-21 teaches generating a 3d image from a plurality of 2d images); and a therapeutic source controllable in response to feedback from the tomography data and producing therapeutic radiation (claim 1 last element teaches that based on the imaging data the computer sends a signal to the radiation source that controls the path of the radiation source).

4. Jaffray does not expressly teach computing means for processing the imaging output to produce a plurality of intersecting sectional views, each sectional view being

Art Unit: 3768

an image containing pixels with values derived from a plurality of voxels in the tomography dataset which are disposed transverse to the corresponding section.

5. Holupka teaches computing means for processing the imaging output to produce a plurality of intersecting sectional views, each sectional view being an image containing pixels with values derived from a plurality of voxels in the tomography dataset which are disposed transverse to the corresponding section (Fig. 5a and 5b).

6. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Jaffray with image processing means to produce a plurality of intersecting sectional views as taught by Holupka, since such a setup would result in better diagnosis, as a sectional view will provide more precise determination of the treatment site, moreover the sectional views could be defined by the user as to contain more information.

7. Jaffray and Holupka teach all of the above claimed limitations but do not expressly teach obtaining pixel values by averaging voxels.

8. Zhang teaches obtaining pixel values by averaging voxels (paragraph 0050, 0051, and 0091).

9. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jaffray and Holupka to teach that the pixel values are obtained by averaging voxels, as taught by Zhang, since such a setup would result in better diagnosis, as the 2d image will have more data in it as it's an average of the voxel values.

Art Unit: 3768

10. Regarding **Claim 7**, Holupka teaches plurality of voxels are disposed orthogonal corresponding section (Fig. 5a and 5b, shows plurality of 2d images which would make a plurality of voxels, which are orthogonal to each other).

11. Regarding **Claim 8**, Holupka teaches plurality of voxels are disposed linearly (Fig. 5a and 5b, shows plurality of 2d images which would make a plurality of voxels, which are linear to each other).

12. Regarding **Claims 9-11**, Zhang teaches that the plurality of voxels are about 10 ((paragraph 0050, 0051, and 0091 teaches N number of 2d images which would have at least N number of voxels, wherein N could be 10).

13. Regarding **Claim 12**, Jaffray teaches the use of a display to show the sectional views (fig. 4 teaches a display).

14. Regarding **claim 18**, Holupka teaches that the sectional images are orthogonally arranged (figs. 5a and 5b).

15. Regarding **claim 19**, Holupka teaches that at least three sectional views are prepared (figs. 5a and 5b).

16. **Claims 13-17, are rejected under 35 U.S.C. 103(a) as being unpatentable**

over U. S. Patent No. 6,842,502 to Jaffray et al. in view of U. S. Patent No.

7.171.255 to Holupka et al. in view of U. S. Publication No. 2005/0171430 to Zhang

et al. further in view of U. S. Patent No. 5,651,043 to Tsuyuki et al.

17. Regarding **claims 13 and 14**, Jaffray, Holupka and Zhang teaches all of the above claimed limitations but do not expressly teach that the therapeutic source is

Art Unit: 3768

controlled by the operator via an input means, and the input means is correlated to the display means.

18. Tsuyuki teaches that the input unit controls the main control unit which controls the display means and the therapeutic means (fig. 4 elements 48 and 40 and col. 22 lines 11-15)

19. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jaffray, Holupka and Zhang with an input for user control of the therapeutic procedure as taught by Tsuyuki since such a setup would result in a safer medical procedure as the computer data is checked by the user before the radiation is carried out, as such a trained user is verifying the procedure hence would result in less damage and more precise and safe radiation.

20. Regarding **Claims 15**, Tsuyuki teaches superimposing images and is movable in response to an input from the input means. (Col. 19 lines 5-11 teaches superimposing an organ onto the images, and deleting the superimposing would meet the element of moving the superimposed image).

21. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Jaffray, Holupka and Zhang to superimpose images as taught by Tsuyuki, since such a setup would result in more operator friendly diagnostic system as images could be superimposed and hence the target could be easily noted.

22. Regarding **Claim 16**, Tsuyuki teaches superimposing images from previous investigations and treatment of patient. (Col. 19 lines 5-11 teaches superimposing based on images, which could be pre-treatment images and fig. 22).

Art Unit: 3768

23. Regarding **claim 17**, Tsuyuki teaches that the superimposed images are outlines (fig. 22).

Response to Arguments

24. Applicant's arguments with respect to claims 6-19 have been considered but are not persuasive. Applicant argues that none of the reference teaches a plurality of sectional views that intersect "substantially at the isocenter of the therapeutic source".

25. Examiner would like to point out that Jaffray teaches a radiation source, whose radiation zone is on the subject. Furthermore Holupka reference teaches a plurality of sectional views that intersect, of a target region. As such the combination of Jaffray and Holupka teaches a plurality of sectional views that intersect at a target region, and the region is radiated by the radiation source. Since the claims recite "sectional views intersecting substantially at the isocenter of the radiation source", as long as the sectional views fall in the region that is radiated, it will be considered to substantially at the isocenter of the radiation source, since the term "substantially" makes the claim broad. Furthermore, Jaffray teaches that the computer controls the radiation source, to focus on the target region, as such the isocenter of the radiation source would be on the intersecting sectional views of the target.

Conclusion

26. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 3768

27. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SANJAY CATTUNGAL whose telephone number is (571)272-1306. The examiner can normally be reached on Monday-Friday 9-5.

29. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3768

30. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SANJAY CATTUNGAL/
Examiner, Art Unit 3768

/Long V Le/
Supervisory Patent Examiner, Art Unit 3768